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(54) Title: **ENHANCED ACCUMULATION OF CAROTENOIDS IN PLANTS**

(57) Abstract: The present invention relates to polynucleotides and their use in methods of increasing the carotenoid content of seeds. In particular the invention provides a polynucleotide comprising: (a) a region which comprises as operably linked components (i) a promoter which provides for seed preferred expression; and (ii) a nucleotide sequence derived from a bacterium which sequence encodes a carotene desaturase; and (iii) a transcription termination region; and (b) a further region which comprises as operably linked components (i) a promoter which provides for seed preferred expression; and (ii) a nucleotide sequence encoding a phytoene synthase which sequence is derived from maize (*Zea* sp.) or rice (*Orzya* sp.); and (iii) a transcription termination region. The disclosed polynucleotides are particularly suitable for use in production of rice seed which comprise high amounts of coloured carotenoids.